



# MORTGAGE BULLETIN

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## ESTIMATING MORTGAGE RESERVES

**A**MONG the changes of recent years in mortgage practices is the broadening interest in mortgage reserves. The increasing recognition that a cardinal factor in servicing mortgage loans is providing reserves to offset possible future losses is significant. Such reserves are particularly important during recent years of granting high percentage loans in a period of real estate inflation with full employment and high wages. Past experience has proved time and again the need for reserves and the challenging question for the mortgagee is how best to estimate the reserves required. Such a tool we have attempted to devise and present here. It is not intended to be theoretically precise, only practicable, effective and usable.

The principles involved are applicable to other types of mortgages, of course, but this bulletin will confine itself to the treatment of amortized conventional mortgages in the home financing field, wherein contract repayments on a monthly basis are included in each payment.

A mortgage may be defined as a "dead pledge" from the lexicographer's easy chair, but the risk attached to a mortgage is a very live and active thing. In forthright language, risk is the chance that the mortgagor will not live up to the terms of the mortgage contract and that the principal amount of the mortgage will be impaired because the value of the mortgaged property proves inadequate to cover the balance due on the loan, plus expenses of foreclosure and liquidation.

The difficulties of judging the ability and intention of a borrower to fulfill the terms of the loan to its maturity emphasize the lessening importance of the personal liability of the mortgagor and the enhancement of the mortgage security.

Our method of estimating the amount of reserves to cushion possible future losses is a program which should be implemented by prudent lending institutions for their own portfolios. Plainly speaking, it is an endeavor to provide a practicable "yardstick" to measure the probable impairment of the principal amount of the mortgage if, and when, the property is brought to foreclosure. The absolute measurement of future loss in the sense of an actuarial determination is not possible. However, we believe that by testing the outstanding mortgage debt against an estimated future sales price of the property over the term of the loan it is possible to more nearly approximate the required amount of reserves to provide for future losses.

The factor of risk, or "loss," is inherent in all mortgages. Theoretically, there are no riskless mortgage loans. Academically, this is true but manifestly there are many mortgages in any portfolio which are "safe" and against which no reserves

whatsoever need be established.

The first step in our program, then, is to classify all mortgages into grades A and B. The Grade A mortgages are those which require no reserves. They include mortgages covered by life insurance and mortgages with an outstanding debt not exceeding 60% of appraised value and amortized at not less than 2%. The B Grade mortgages make up the remainder of the portfolio and must go into the hopper for testing. It is to be expected that many B mortgages may have a sufficient factor of safety for upgrading to Grade A. For each mortgage tested a chart is formulated projecting the lowest probable replacement value and sales price of the property for the next eighteen years. The unpaid balance is also projected for the same period. From the chart can be determined at any point during the life of the loan the estimated debt-value ratio and what the initial foreclosure loss would be if the mortgage came to foreclosure.

On pages 231 and 232 of this bulletin is a reproduction of the chart and descriptive sheet of a typical residential mortgage. The chart may be redrawn so that the left-hand scale represents 100% and curves can be developed which will apply to any type of property. In this way can be shown the percentage of down payment and the per cent of value mortgaged for any property. On the chart illustrated, the solid red line shows the indicated future value, which is assumed to be the lowest probable replacement cost less accrued depreciation, from 1949 to 1965. The dotted red line plots the probable sales price of the property based on the most pessimistic assumption which seems within the range of probabilities. The blue line shows the unpaid balance in any given year on the principal amount of the loan. The red tinted area between the indicated future value line and the dotted line of probable sales price shows the period when a surplus discount might prevail and property might sell considerably below its value. The difference between the unpaid balance line and the dotted line of probable sales price indicates what the loss, if any, might be if foreclosure had to be resorted to during the distress period. Thus the chart discloses in advance loans with a positive safety factor as well as those with a negative safety factor which might require reserves.

The mortgage lender must always consider the worst possibility that seems reasonable in estimating reserves. Therefore, in reviewing mortgages for upgrading to the A group only mortgages which the charting shows have a market value approximately 50% greater than the unpaid balance on the loan should be included in the Grade A classification. This is an extremely conservative margin of safety but it is advised in case the next depression should prove to be more severe than we anticipate. The largest possible loss that might occur with each B mortgage is then taken from the mortgage cards and the aggregate amount regarded as the loss at the time of foreclosure. The costs of foreclosure and the estimated expense of rehabilitation and sales must then be added to this total.

The experience of the past with loans on single-family homes was generally far more favorable than with mortgages on any other kind of property. Reliable studies made in both the 1920's and the 1930's show the loss on single-family residences was less than one-half the loss rate on other real estate regardless of type. History never exactly repeats itself and we do not think it will this time. In fact, it is our opinion that, on balance, losses on current portfolios will be less even if the next depression is more severe than we expect it to be. Practically all mort-

Address of Property 6421 Watson Street

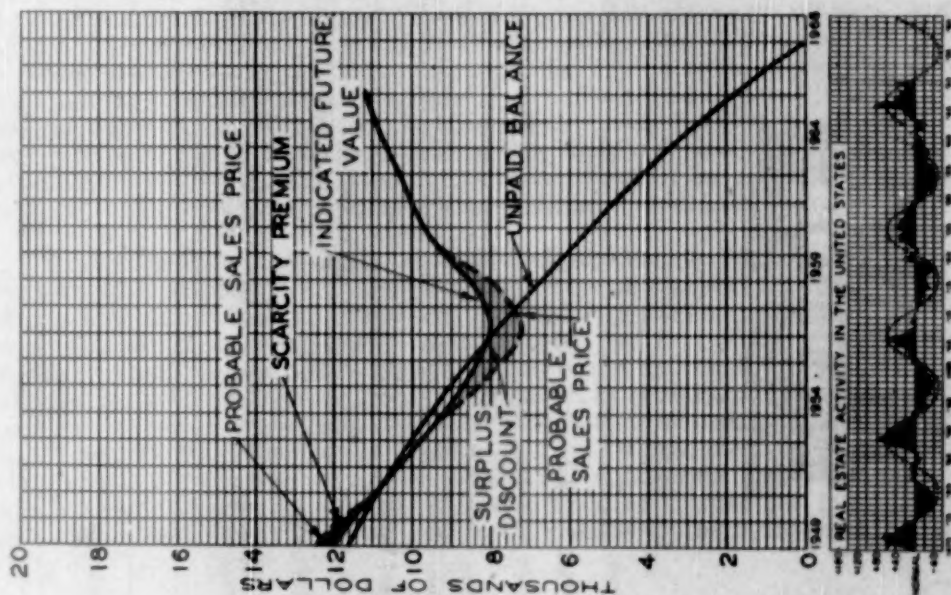
Owner L. B. Jones

### EXPLANATION OF THE CHARTS

The solid blue line on the chart opposite shows the unpaid balance in any given year on the principal amount of the loan. The line in red is our estimate of the possible future value of the property based on the definition as given below. The probable sales price reflects the factors of scarcity premium and surplus discount during extensive periods of market fluctuations.

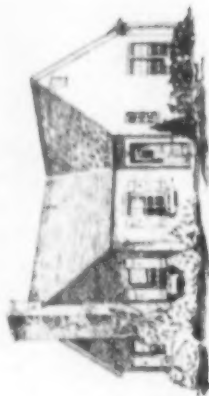
The lower chart shows the real estate cycle which is based upon the number of voluntary transfers of real estate in the principal cities of the United States, supplemented by the idealized cycle of 18 years superimposed on real estate booms and depressions to show their regularity.

In preparing this study no formal appraisal was made although the premises have been inspected. All factors necessary for the selection of an indicated future value have been considered, thus enabling comparison with the elements involved in relation to the mortgage indebtedness.



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BUILDING: Year Built 1947



Description 1 story and basement  
brick bungalow with frame interior,  
containing 5 rooms and bath.

Remodelling None. When

Stores 0 Apts. 0 (rooms) Garages 1 car

Present Condition Fast well has large  
settling crack from foundation to roof.

NEIGHBORHOOD: Classification Average

Adjacent Properties Similar but older

Zoning Residential

Water Yes Sewers Yes Cess Pool No

Street Macadam Sidewalks concrete

LAST SALE: Date 1/4/48 Price \$ 15,000

Cash \$ 3,000 Mortgage \$ 12,000

## RECOMMENDATIONS

This house was well built in a neighborhood consisting of homes with an average age of 25 years. However, the neighborhood is undrained, and fire clay is present under the majority of the homes. Consequently, many homes require expensive underpinning. It is recommended that every attempt be made to reduce the size of the loan by prepayment if possible. Also require owner to underpin the building and repair settling crack in east wall.

Address: 6451 Varson Street Loan No. B-2787

Owner: L. E. Jones

Owner's Address: 6451 Varson Street Phone No. Te. 5-8781

Plot 7' 6" X 112' 6"

Original Loan: \$ 12,000

Present Loan: \$ 11,420

Terms of Loan: 5% Amortized 20 years

## APPRAISALS:

1948 year \$ 16,000 value \$ 11,420 present loan 1.40 factor

\$ \$ \$ \$

\$ \$ \$ \$

Assessment:

\$ 1,125 land \$ 4,625 total \$ 11,420 present loan 0.31

gages are on a monthly amortized basis including payment of taxes. Then, better appraising techniques of screening applications, standards of servicing and better personal relations with the borrower, should all contribute to cutting down future mortgage losses. It should likewise be considered that the fewer mortgages making up a portfolio the broader the chance of a higher ratio of loss to total mortgage principal. Hence, losses determined from past experience with smaller portfolios may indicate larger future possible losses than will actually materialize with the substantially expanded portfolios of today.

The dollar amount of the reserve should be the actual total of the estimated probable losses on those mortgages where losses are deemed to be possible (Grade B). It is manifest that the amount of the reserve will differ widely as the conservatism of the lending agency may vary. The conservatism or lack of conservatism in the portfolio is considerably influenced by the personalities of the appraisal staff and the personalities of the mortgage loan committee. We hesitate to cite an average figure for the reserve because medians, averages and other generalizations may well lead to a false sense of security. The method which is brought out in this bulletin is to be applied as such for a meaningful and usable result. The prime consideration in our method is that the dollar size of the reserve be determined in accordance with possible losses rather than a blanket percentage against the entire mortgage portfolio.

It may be helpful, however, to know where your own portfolio stands with respect to some others we have looked into. An analysis of a typical mortgage account will probably show a reserve of 5% of the total portfolio to be ample, including both Grade A and Grade B mortgages, and that this amount will cover all foreclosure losses. If your reserve should happen to total, let us say, 5%, for example, then reserves should be allocated at the rate of one-half of one per cent per year of the total mortgage portfolio until the total is equal to the estimated possible loss. For another example, one Middle Western insurance company with a substantial conservative mortgage portfolio is setting up reserves of the yearly rate of one-fourth of one per cent of the total face value of its loans; no ceiling figure has thus far been established for the reserve account of this particular insurance company.

In the October 28 issue of the "As I See" Bulletin (Number 49) last year we presented a table showing the original cost and average selling price of a typical residential property as they fluctuated year by year from 1925 through 1949. We followed that up with another bulletin dated November 14, 1949 (Number 53), showing in tabular form how we projected this former study into the future and recorded what we believed would be a probable fluctuation of residential values during the next fifteen years. We made this projection on what we consider a strongly pessimistic probability. While we wish it understood that we think there is a considerable chance that selling prices during the period ahead will average higher than the projections which we have presented, it should be borne in mind that in making his loans the prudent mortgage lender must always consider the most unfavorable possibility that appears reasonable.

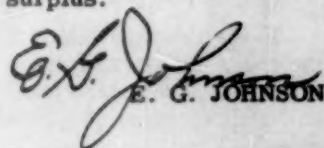
In the preparation of the projection which is embodied in the solid red line on the chart we are assuming that the replacement cost of average residential properties, including land and building, at the next major dip in the real estate economy will still be about 67% greater than it was in 1939 when the war started in Europe.

(Replacement cost of the building alone at this assumed low point will be approximately 75% above the 1939 cost.) In general, land prices have not kept abreast with the increase in construction costs. By 1965 we look for the replacement cost of an average residential property (land and building) to be in the neighborhood of 130% above the 1939 level. By that time we anticipate we will have weathered the next depression. But we are estimating that fifteen years from today residential property values will not have attained the high selling prices in today's market even after some half dozen years of price increase. Nevertheless, it will be apparent that we have given consideration to the inflationary effects of the war and postwar period, and that we have reflected in our projections of average selling prices our conviction that a substantial part of our recent and present inflation has become permanently fixed in our economy. Certainly, we are aware that any forecast for a fifteen-year period in the future is exposed to a certain margin of error, and as the factors which affect value clarify themselves hereafter our forecast will be revised. At present, however, we believe that our projections are the best guide available to the mortgage lender on how single-family residence values may probably react in the future. It is, of course, true that the future cannot be foretold exactly. In the light of the very best judgments the projections of future selling prices will have some element of error. Nevertheless, the charts provide valuable bench marks which will help inform the judgment of officers of mortgage lending institutions in establishing reserves.

We are frequently called upon, in a consulting capacity, to study, review and report on specific mortgages and entire mortgage portfolios of lending institutions. Our experience has been that the method of setting up reserves which we present in this bulletin is practical, efficient and usable. Occasionally these studies turn up mortgages which should be sold, and others which should be retained only if certain indicated remedial steps are taken.

In essence the method is quite simple. Although we cite only the amortized single-family residential loan as our example in this bulletin, the method is quite universal in its application. By the simple device of substituting properly developed charts and forecast curves appropriate for each type of property, any loan or group of loans may be analyzed. This forecast curve in any particular case is nothing more than an attempt to get a "living appraisal." The customary appraisal on the other hand is, of course, the market value appraisal which is valuable today and useless tomorrow. We need a "living appraisal" to test against the unpaid balance due on a loan at any given time. The costs incident to foreclosure must also be taken into consideration. The relation between the amount of the unpaid balance and the sale price of a property at a foreclosure sale is the truest test of the safety of any mortgage at any given instant of time; and this is the fundamental basis of our method.

Before writing finis to this bulletin we have this to say: We have presented a method. Probabilities are of important concern in its application but that does not significantly affect its logic. It is better to err by having a reserve too large than too small. A reserve is merely the recognition of a contingent liability against the surplus account. If too large an amount has been earmarked, it is always relatively easy to reduce the reserve and to increase the surplus.

  
E. G. JOHNSON